REMARKS

The office action of July 8, 2010, has been carefully considered.

It is noted that the specification is objected to for containing various informalities.

Claims 4 and 11 are objected to under 37 CFR 1.75(c).

Claims 4, 11, and 12 are objected to for containing various informalities.

Claims 5-8, 10 and 14-16 are rejected under 35 USC 112, first paragraph.

Claims 1, 3, 4 and 13 are rejected under 35 USC 112, first paragraph.

Claims 1, 3, 4 and 13 are rejected under 35 USC 112, second paragraph.

Claims 1, 3, 4 and 13 are further rejected under 35 USC 102 (b) over the patent to MacRae.

In connection with the specification, Applicant has amended the specification to include headings.

In view of the Examiner's objections to and rejections of the claims, Applicant has canceled claim 4 and amended claims 1, 5, 11 and 12.

With the cancelation of claim 4 and the amendment to claim 11 it is respectfully submitted that the objection to these claims under 37 CFR 1.75 (c) is overcome and should be withdrawn.

Applicant has amended claims 11 and 12 to address the informalities pointed out by the Examiner. Therefore, it is respectfully submitted that the objection to claims 4, 11 and 12 is overcome and should be withdrawn.

Applicant submits that the claims now on file comply with the written description requirement. Claim 5 has been amended so that the tubes are copper tubes. With this change it is respectfully submitted that the rejection of claims 5-8, 10 and 14-16 under 35 USC 112, first paragraph, is overcome and should be withdrawn.

Applicant submits that the subject matter of claims 1, 3, 4 and 13 is described in the specification in such a way as to enable one skilled in the art to which pertains, or with which it is most nearly connected, to make and/or use the invention. Applicant submits that the Examiner is not correctly interpreting the teaching on page 9 of the specification. Contrary to the Examiner's statement in the Office Action, the specification does not teach that "final articles contain virtually no nickel at the interface of the coolant channel tubes and the cast alloy." What the specification actually says is that "the nickel of the

electrodeposited nickel layer is scarcely detectable in this region."

In order to understand the technical information provided by the above wording, one has to refer to the process which happens when the copper tube, the outmost layer of which is electrodeposited with nickel, comes into contact with the poured-in copper melt. As one learns from the teaching on page 8 of the specification, this contact triggers a diffusion process, the result of which is a thin alloy layer being created at the boundary surface between the electrolytic coating of the tube and the cast-around copper.

As a person skilled in the art knows, a diffusion process means that there is a migration of nickel into the surrounding copper melt and the migration of copper from the copper melt into the nickel coating of the copper tube. Thus, the diffusion leads to an improved adhesion of the casting metal on the tube, combined with the heat transfer with virtually no loss. Moreover, the diffusion process leads to a decrease of the nickel concentration in the nickel coating since a part of the nickel content is replaced by copper from the copper melt, which degree of decrease depends on the diffusion time. Thus, it may be that the nickel content is hard to detect, but it will be detectable depending on

the accuracy or sensitivity of the detection method. Consequently, the language used in the specification and referred to by the Examiner is "the nickel of the electrodeposited nickel layer is scarcely detectable". Applicant submits that a person of ordinary skill in the art would understand this to mean that it may be hard to detect the nickel content but it is possible to do so.

In view of these consideration, it is respectfully submitted that the rejection of claims 1, 3, 4 and 13 under 35 USC 112, first paragraph, is overcome and should be withdrawn.

It is respectfully submitted that the claims presently on file particularly point out and distinctly claim the subject matter which Applicant regards as the invention. Applicant has amended the claims to address the instances of indefiniteness cited by the Examiner.

In view of these considerations, it is respectfully submitted that the rejection of claims 1, 3, 4 and 13 under 35 USC 112, second paragraph, is overcome and should be withdrawn.

It is further respectfully submitted that the claims now on file differ essentially and in an unobvious, highly advantageous manner from the methods and constructions disclosed in the reference.

Turning now to the reference, it can be seen that the patent

to MacRae discloses a furnace wall cooling block. MacRae teaches producing a cooling element by casting a tube made of copper-nickel alloy inside a cooling block, the cooling block being preferably cast with electrolytic copper. Thus, the resulting cooling element has the copper-nickel alloy tube cast inside the electrolytic copper environment (see column 7, lines 44-54 of MacRae). As taught by column 8, lines 14-21 of MacRae, the interface or boundary surface between the copper-nickel alloy pipe and the cast copper is a metallurgical bonding layer that shows grains of the cast copper being metallurgically bonded to the pipe copper leading to a welding zone, which is disclosed as being characteristic since "such a good metallurgical bond (welding) is not normally observed in any prior art coil material".

The present invention is clearly distinguishable from the MacRae cooling element in that no welding zone is formed between the nickel coating of the copper tube and the cast copper. Instead, in the present invention, there is a diffusion zone between the nickel coating of the copper tube and the cast copper, which diffusion zone is distinguishable from a welding zone "showing grains of the cast copper being metallurgically bonded to the pipe copper". Thus, MacRae does not disclose or render obvious the presently claimed invention.

In view of these considerations it is respectfully submitted that the rejection of claims 1, 3, 4 and 13 under 35 USC 102 (b) or, in the alternative, under 35 USC 103 (a) over the above discussed reference is overcome and should be withdrawn.

Reconsideration and allowance of the present application are respectfully requested.

Any additional fees or charges required at this time in connection with this application may be charged to Patent and Trademark Office Deposit Account No. 02-2275.

Respectfully submitted,

By 

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CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner for Patents, PO Box 1450 Alexandria, VA 22313-1450, on November 8, 2010.

By: 
Klaus P. Stoffel

Date: November 8, 2010